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JAMES McKEEN CATTELL—IN MEMORIAM

ORGANIZER OF AMERICAN SCIENCE

By Dr. EDWIN G. CONKLIN

PRINCETON UNIVERSITY

THE measure of a man's influence on science in his own and future generations may be taken (1) by his personal contributions to knowledge in his chosen field and (2) by his contributions to the organization of agencies, facilities and institutions which serve to coordinate and implement the labors of others. The former may be called his individual, the latter his social contributions to the advancement of science. Measured by either of these scales the work of J. McKeen Cattell was very important. His work began and his reputation was made with detailed work in experimental psychology. For ten years from 1885 to 1895 his published work was limited to researches in this field and resulted in more than thirty contributions from the psychological laboratory. Throughout his long life he maintained active interest in psychological research and its influence permeated all his later work.

The social aspect of his work, represented by the organization of science and scientists, had its rise and center in his work as editor and publisher of scientific journals and the opportunities which this brought him. The weekly journal SCIENCE, which he acquired in 1894, became under his ownership and editorial management one of the most important factors in the organization of science in America. A brief review of the earlier and later history of this journal will indicate the nature of the problem which it posed and the splendid way in which Cattell met it.

Science, An Illustrated Journal published weekly, was started in 1883 and was published first at Cambridge, Mass., by The Science Company. I have found no statement of the persons composing this company, but it is known that Alexander Graham Bell and one other person gave it large financial support. From 1883 to 1885 S. H. Scudder was editor and N. D. C. Hodges assistant editor. From 1885 until 1894, when its publication suddenly ceased, N. D. C. Hodges served as editor and his name replaces that of The Science Company on the title page, indicating that he was the owner. Volumes I to IX appeared in a format similar to that of *Nature,* with

28 pages of text and 4 cover pages in each number, and with many illustrations. Beginning with Vol. X, July, 1887, it appeared in a larger format of 16 pages and the subscription price was reduced from $5.00 to $3.50 per volume.

There are many evidences in these later years that the publisher was having financial difficulties. In addition to economies in format and production there were many attempts to increase circulation. In the issue for October 14, 1892, the following announcement was made:

> SCIENCE owes its existence to the munificence of two gentlemen, whose names we do not feel at liberty to publish, who contributed very nearly $100,000 toward the support of the paper in its early years. There is no longer need of such liberal subsidizing, but we do need cash subscriptions from all who feel at all interested in a weekly journal of science in America.

Again in the issue of December 16, 1892, this announcement appears:

> There is at present much more material offering for publication in SCIENCE than can be used so long as the paper remains at its present size. It now rests with the scientific public whether the size of the paper shall be doubled and the price raised from $3.50 to $6.00. (Blank forms of subscription, with club rates of four subscriptions for $20 follow.)

In the issue of January 6, 1893, the following announcement appeared:

> The enlargement of *Science* by doubling the number of pages will have to be indefinitely postponed as the result of our efforts for three months to get eight hundred new subscribers, at the proposed increased price, has been too small to justify our going to further expense.

In the same issue this optimistic announcement is made:

> More than one thousand of the leading scientific men and women of America and Europe have agreed to contribute to the paper during the coming years; and as others are constantly joining in this move to make the paper more valuable than ever, it cannot be long before there will be over two thousand competent users of this weekly medium of scientific discussion.

But in spite of the contributions of this large number of scientists the journal was a financial failure and with the issue of March 23, 1894, it suddenly ceased to appear. Its failure, as we now see, was due largely to lack of proper organization of support among American scientists and scientific societies. At this opportune time Dr. Cattell, who was newly established as head of the department of psychology at Columbia University, acquired title to SCIENCE and set about securing the cooperation of leading men of science in America in the support of a new series of SCIENCE.

The first issue of this new series appeared January 4, 1895, with the support of an editorial committee consisting of eighteen of the first-rank scientists of America representing as many different fields. The leading article of two columns was by Simon Newcomb, recognized dean of American scientists. It begins:

> After a brief period of suspension this journal again appears, greeting its readers with the compliments of the season. The interest in its future which has been shown in various quarters during the last few months, convinces its editorial staff that there is room for a journal devoted to the promotion of intercourse among those interested in the study of nature. . . . The experience of centuries shows that great success in advancing scientific knowledge cannot be expected even from the most gifted men, so long as they remain isolated. . . . We need a broader sympathy and easier communication between widely separated men in every part of the country. Our journal aims to supply the want of such a medium, and asks the aid of all concerned in making its efforts successful.

President Gilman, of the Johns Hopkins University, follows with an article entitled, *"Scriptoribus et lectoribus, Salutem,"* in which he points out the ideals which should be kept in mind in the conduct of SCIENCE. Then comes the introductory address of Daniel G. Brinton, president of the American Association for the Advancement of Science, the notable address of G. Brown Goode as retiring president of the Philosophical Society of Washington, papers by T. C. Mendenhall, J. W. Powell, C. Hart Merriam and Samuel H. Scudder—all indicative of the fact that the editorial committee was taking an active part in the new SCIENCE. Reviews, Notes, Meetings of Societies and Academies, Scientific Journals and New Books are listed and all appear in the attractive format with which we have become familiar during the past fifty years. The new SCIENCE was a thoroughly cooperative enterprise, the name of J. McKeen Cattell appearing only as one of the editorial committee and as "responsible editor," in instructions to authors. But it is plainly evident that all this cooperation had been brought about by the labors of Cattell.

It is also evident that it took money, courage and high ideals to convert the financial failure of the old SCIENCE into the eminent success of the new. It was carried on at a financial loss for several years, but by hard labor on the part of Dr. and Mrs. Cattell and by its growing importance as a means of rapid publication of reports of scientific societies and of scientific discoveries and news it soon became the leading scientific publication of America.

The cooperation between SCIENCE and the American Association for the Advancement of Science has been of the greatest value to each of these. In a notable

article on "The Organization of Scientific Men" first published by Cattell in *The Scientific Monthly* for 1922, and again reprinted by him as one of his last publications, he wrote: "The American Association for the Advancement of Science has made notable progress beyond the similar associations of other nations by the support of a weekly official journal and by affiliation with the national societies devoted to the different sciences."

At the meeting of the American Association for the Advancement of Science in New York in June, 1900, it was reported that "many members do not think that they receive an adequate return for their dues" of $3. "The Council then decided to send SCIENCE free of charge to all members of the Association next year, and to publish in it the official notices and proceedings. This action will increase the membership of the Association and the interest of its members in its work, while at the same time extending the influence of the journal and promoting the cause to which both the Association and the journal are devoted—the advancement and diffusion of science." There is no doubt that this bold and at first costly arrangement on the part of both the Association and SCIENCE had precisely the effect anticipated, and out of it grew the provision that has long been in force that members of the association may receive SCIENCE for $3 per year.

Following this New York meeting the American Association for the Advancement of Science proposed that the week between Christmas and New Year's Day be recognized by all the national scientific societies as "Convocation Week" and that as many of these societies as found it desirable to do so should meet with the American Association for the Advancement of Science during that week. This was approved by seventeen of the national scientific societies and by thirty-four universities and scientific institutions, and the first great convocation of these societies and the American Association for the Advancement of Science was held in Washington in the Christmas holidays of 1903.

In all this cooperation between the American Association for the Advancement of Science and SCIENCE and between the Association and other national societies Cattell took the leading part. The Association with its affiliated and associated societies is now the largest scientific organization in the world and from the beginning of the new series the reports of the meetings of these national societies has occupied a large place in SCIENCE. Many who took part in these meetings will remember how constantly Cattell was present and how urgently he invited authors of good papers to submit them for publication in one or another of his journals.

Cattell was one of the first of American scientists to recognize the great power of the press in the promotion of science and to provide the means for such publication. With J. Mark Baldwin he founded the *Psychological Review* in 1894. He was also a founder of the *Archives of Psychology* and the *Journal of Philosophy, Psychology and Scientific Methods.* His success with SCIENCE led him to take over in 1900 the ownership and editorial supervision of the *Popular Science Monthly,* which had been established by E. L. Youmans in 1872 and which was in need of rejuvenation; its title was changed in 1915 to *The Scientific Monthly.* In 1907 he assumed control of *The American Naturalist,* which had been in active operation since 1867, but which was in danger of passing out of existence. In 1915 he founded the weekly journal *School and Society,* and conducted it as one of the leading journals of education until it was sold to the Society for the Advancement of Education, W. C. Bagley, editor, in recent years. He was a trustee of Science Service from its foundation until his death and was president of its board of trustees from 1928 to 1937. In 1906 he published the first edition of "American Men of Science," which was followed by second, third, fourth, fifth and sixth editions in 1910, 1921, 1927, 1933 and 1938. A seventh edition is now ready for the press. A companion directory entitled "Leaders in Education" was published in 1932 and a second edition in 1941. All these publications were issued from The Science Press Printing Company, Lancaster, Pa., which Cattell established in 1923 and of which he was president.

He was the responsible editor of all these publications while they were under his management, but in many of them he had an active board of associate editors, and always a silent but potent partner in his wife, Josephine Owen Cattell, while some of his children were associated with him in this work in his later years. In the Cattell home or office certain days in every week were devoted to this editorial work, one or more days being sacred to SCIENCE, others to *School and Society,* etc. Even in vacation this routine could not be relaxed, as many persons at Woods Hole found during the two summers the Cattells spent there.

Dr. Cattell was not only a great organizer of scientific publications and societies but he was also a great democrat and a bold and unyielding fighter for the rights of the common man. His organizations were based on democratic principles and he was unsparing in his criticisms of organizations and foundations that were handed down to the workers in science, education or society in general. He held that the rights of workers must be secured and safeguarded by the organization of the workers themselves. He regarded this democratic organization of scientific men as one of the greatest needs of the age. "There is scarcely any group," he said, "that has been so

backward in democratic organization as men of science; there is no other in which conditions make the right kind of organization more necessary. . . . Science has not only supplied the economic basis for our civilization; it has not only made economic slavery wanton and intolerable; it has freed us from superstition and unreason; it is in itself the most perfect art and the best religion, the force not ourselves that makes for truth and righteousness."

He maintained that the workers in science should share in the profits of their own discoveries and he strongly favored the taking out of patents on scientific discoveries, so that profit might go for the promotion of research rather than for the enrichment of capitalists. In 1921 he organized the Psychological Corporation for the purpose of selling the services of psychology and psychologists to the public—all income and profits to be used for the promotion of psychological research. He always stood firmly for the rights of the workers in any field and against those persons and agencies that would exploit the workers.

His criticisms of university organizations which placed great power over professors in the hands of deans, presidents and trustees was unsparing. He wrote, "The department or group should name its head and those to be added to it. The teachers or professors should name their deans and their president should be responsible to them. The trustees should be trustees, not regents or directors." In 1912, 1913 and again in 1914 he proposed that there be organized "an American Association of University Professors, similar to the medical and bar associations, which would be an influential force in improving the conditions under which our work is done," and he later took an active part in founding and promoting this association.

He feared "the Greeks bearing gifts and then taking them away," and he did not hesitate to criticise severely the policy of the Carnegie Foundation for the Advancement of Teaching, pointing out that the income of that Foundation would not be sufficient to pension, on the plan first proposed, the retiring professors in a single large university at the end of forty years. His estimates were later found to be much more nearly accurate than those of the actuaries who had advised the Foundation.

He always had the courage of his convictions and did not hesitate to advocate any action he considered right or to condemn any he thought wrong, however unpopular his position might be. This quality sometimes got him into trouble with university or public authorities, but he was so generally right that he usually won his fight in the end. He occupied a unique position among American men of science and he did more than any other man of his generation to bring about the organization of science in America.

CONTRIBUTIONS TO PSYCHOLOGY AND EDUCATION

By Dr. EDWARD L. THORNDIKE

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CATTELL graduated from college in 1880. From then until 1894, when he became editor of SCIENCE, his life was devoted exclusively to study, teaching and research in psychology. In those years he made and published important contributions on psycho-physics, reaction time, perception and association. Much of his work during this period consisted in doing what other psychologists had done, but with more ingenuity, precision and wisdom. He was notably successful in exposing artificialities, pedantries and loose thinking in the work of others and avoiding them in his own. He also opened up new lines of psychological investigation. Among these was the adequate treatment of individual differences in mental abilities, propensities and forms of behavior. Galton had already shown the importance of such differences, but psychologists still tended in general to hide human diversities in averages or even to discard them before computing the averages. In his very first published research, Cattell exemplified the proper treatment of them. In his paper of 1890 on "Mental Tests and Measurements" and in the systematic collection of measurements of individuals begun at Pennsylvania and continued at Columbia, he led the way in what has become a very large part of psychology. His abilities and achievements won early recognition in the form of a professorship in the University of Pennsylvania at the age of twenty-eight, the headship of the department of psychology at Columbia at thirty-one, and the presidency of the American Psychological Association at thirty-five.

In the ten years after his assumption of editorial and financial responsibility for SCIENCE, Cattell was a thorough student of psychology and a competent guide to investigators in the Columbia laboratory; but he relaxed his own investigations and his original contributions were limited to two reports: "On Relations of Time and Space in Vision" in 1900 and "The Time of Perception as a Measure of Differences in Intensity" in 1902. From 1905 on he was increasingly a man of

science in general rather than of any one science, an editor rather than an experimenter, an organizer and manager rather than a student.

It is interesting to speculate on what would have happened if he had stuck as closely to psychology as his teacher Wundt did in Germany or his friend and contemporary, Jastrow, did in America. I think that the methods of experimental psychology, educational psychology and social psychology would have been sounder and that their progress would have been along somewhat more desirable lines than has been the case. At the turn of the century Cattell was by far the most likely candidate for active leadership in American psychology. If he had been such an active leader for thirty years or more, certain schools of psychology might well have been less bigoted and many individuals saved from one or another pedantry or folly.

He chose to become both a leader and a servant, and of American science as a whole rather than of only psychology. And nobody should regret his decision. Take only one aspect of his work—the provision of an impartial journal in which for a half century any reputable man of science could set forth any honest opinion about any matter of importance to science, from the most specialized and technical to the most general or controversial—and ask what services as a psychologist could have equalled that.

During the last half of his life Professor Cattell's investigations in psychology consisted chiefly of certain measurements taken of himself, and not yet published and of statistical studies of the data gathered for successive editions of "American Men of Science." He resigned from co-editorship of the *Psychological Review* in 1904. He did not cease to be a psychologist, even after he was the editor and publisher of four important periodicals, two of them weeklies, but his leadership was in psychological affairs rather than in psychological thought and experimentation.

He was made president of the International Congress of Psychology held in this country in 1929. In 1921 he founded the Psychological Corporation, a unique organization to promote applied psychology, and was its president for many years and later the chairman of its board of directors.[1]

Cattell believed in the possibility of a science of education and was on the lookout for educational implications in his experiments on perception, association and individual differences. He had theories about the educative process, notably the theory that a home with many children of different ages was in certain respects superior to a classroom filled with children as nearly alike as possible. He had pronounced views about the management of universities, as shown in his volume of 1913 on "University Control." His most valued work for education was as organizer and editor. He induced the American Association for the Advancement of Science to establish the Section on Education, and worked to make it a success. He devoted much time and thought to the better education of the public in matters of science through the newspapers, in connection with the administration of the Scripps bequest, and was the president of Science Service from 1928 to 1937. In 1915 he founded *School and Society* as a dignified weekly journal for education in all its aspects, was its owner and editor until a few years ago, and arranged for its continuance under suitable auspices.

AS I KNEW HIM IN THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

By Dr. BURTON E. LIVINGSTON

THE devoted interest of J. McKeen Cattell in the organization of men and women of science in this country and Canada entered upon a new phase through the reorganization of the American Association at the end of the year 1919, when the present constitution of the association was ratified at the third St. Louis meeting. That constitution had been prepared by J. McKeen Cattell, E. L. Nichols, H. L. Fairchild and D. T. MacDougal. Among other innovations then introduced, the Executive Committee of the Council was established, virtually replacing the earlier Committee on Policy and the General Committee. To the Executive Committee was allocated a large degree of influence and power. In the years since its organization it has executed commitments from the Association Council, has made recommendations to the Council and has acted legally for the Council in making many important decisions in the interims between association meetings, when the prime body could not take action. Cattell was an influential member of the new committee from its beginning in the spring of 1920 and he became its permanent chairman in 1925, continuing in that office till his resignation in 1941.

[1] A more adequate account of Cattell's work as a psychologist will be found (a) in an article by R. S. Woodworth which will appear soon in the *Psychological Review*, and (b) in a number of the *Archives of Psychology* (No. 30, April, 1914) entitled, "The Psychological Researches of James McKeen Cattell," prepared by his pupils to celebrate his completion of twenty-five years of service as professor of psychology.

At the committee's meeting in the spring of 1925 Cattell was elected to be its permanent chairman and he continued in that office till his resignation in 1941. Reelected from term to term by the Council, he served on the committee for twenty-four years, being its chairman throughout all but the first five and the last three of those years. My own membership in the committee has been continuous since that St. Louis meeting, first as Permanent Secretary, then as General Secretary and afterwards as an elected member. It was indeed a great and pleasant privilege to work with Cattell during such a long period, in a field of service that always lay close to his heart. I think I came to know him well as our friendship developed and the association grew and prospered.

My intimate acquaintance with Cattell and with the reaction patterns of his mind really began with an hours-long conversation on a railway train as we were returning east after the close of the third St. Louis meeting. That conversation was occasioned mainly by my recent agreement to undertake the permanent secretaryship, to be effective about a month later. At a breakfast conference on January 2, 1920, I had been officially notified of my election to that office, by a special committee consisting of Simon Flexner, A. A. Noyes and J. McKeen Cattell. I was to succeed Dr. L. O. Howard, who had been Permanent Secretary for twenty-seven very successful and eventful years of the association's continued growth and who had been elected president for 1920. Cattell was already an elder statesman of great influence in our organization and I was the merest of tyros in association affairs.

Knowing quite well my need for information and advice, I asked many questions, both of fact and of judgment, to which he responded with helpful and enlightening replies. A pleasant degree of intimacy was implied by his prompt request that his title of "Dr." be omitted in our talks and correspondence; "Livingston, I wish you'd call me just Cattell." He dwelt on the great present importance of the methods of science in human thought and their still greater promise for future national culture. He insisted that this new job of mine would present an invaluable opportunity to aid in furthering the advance and spread of science by means of such a broad organization as the association was coming to be. Then and in later conversations, as well as in many remarks and comments that he made at sessions of the Executive Committee in after years, Cattell's ever-present wish was for human progress through science in its broadest sense; the association was to be a powerful means toward that end, but its activities should never be allowed to hinder the efforts of individuals and other societies that were working in that same general direction. To scientific societies and institutions the association was to offer help and cooperation without competition.

As chairman of the Executive Committee, year after year, Cattell showed several remarkable characteristics of mind and method. Early in each session he would bring up a question concerning the prospective hour of adjournment, so that we might complete the program of agenda without undue haste at any point. He generally took active part in the discussions, but frequently allowed the comments of others to precede any definite statement of his own attitude on a debated question. He was usually able to integrate the several positions indicated in a discussion, when there was some degree of disagreement, in such scholarly and convincing manner that the final vote had to be announced as unanimous, without any dissent. As the years went by, I think he became increasingly pleased with the long series of unanimous actions taken by the committee.

Another memorable personal characteristic of Cattell's was his natural inclination to enliven committee sessions as well as conversations with *obiter dicta* of interesting or amusing comments, anecdotes or scholarly jokes, which always seemed well chosen for the current discussions that they momentarily interrupted. He always encouraged and invited others to take part in such digressions. One usually came away from those sessions with pleasant lighter recollections as well as with the feeling that the serious business in hand had been very satisfactorily transacted without too laborious insistence on always holding to the point. On the other hand, in less convivial or more intense moods one sometimes had the impression that some portion of the time devoted to a session seemed to have been "wasted." Possible grounds for such a thought were not unappreciated by our chairman, who would call us back to serious business after each short diversion.

Consistent leadership by some one who had the association and its broad objects constantly in mind at all times was clearly needed, and Cattell supplied that need to the best of his very great capacity and opportunity. As publisher and editor of the two association journals, SCIENCE and *The Scientific Monthly*, and of his other journals, as a leader in the organization and development of Science Service, as a member of the National Academy of Sciences and many other scientific organizations, as an almost regular attendant at many of the principal scientific meetings in this country, and as originator, editor and publisher of the very useful biographical volumes of "American Men of Science"—through these various relations he became well acquainted with a very large number of American scientists. In many instances he perhaps

knew their attributes and accomplishments even better than they knew themselves. When an important science position was to be filled by appointment or election, Cattell was often called upon for suggestions and appraisals. On the basis of his judgment, at least in great part, were selected all four of the permanent secretaries of the association who have taken office through Council election since the present constitution was ratified in 1919. In some ways he became a sort of benevolent patriarch, as it were, of American science clans.

As every one knows, the longer any person occupies a position of great trust and responsibility in a democratically organized group or society, the more numerous and audible are criticisms of his performance likely to become. Rarely within the Executive Committee, but perhaps less rarely and sometimes more audibly among the other members of the association Council, complaints began to be occasionally heard that Cattell seemed to be "running the Association." Such complaints were generally no more than reflections of the obverse of his devoted personal interest and uniformly well-thought-out judgments for the welfare and growth of the organization. With regard to association aims and policies and the general conduct of its affairs he often had strong convictions, but whenever uncertainties or disagreements were frankly brought out by his colleagues he was always ready to help us reach a satisfactory compromise before discussion ended. Despite his own clear views, we found him always open-minded and democratic over all and in the long run. It is significant that he was repeatedly returned by Council election to membership in the Executive Committee. Excepting for the single year (1924) when, as president, he was an *ex officio* member of the committee, he was always one of its eight elected members.

With rapid development of the special sciences and the organization of more and more special science societies, the original strength of the association and its sections seems to have been somewhat threatened, whether generally realized or not, in a period just before the ratification of the new constitution. I think we may recognize the ingenuity of Cattell in the new provisions for the present official affiliation of independent societies, instead of the looser affiliation of earlier years. Since 1920, each affiliated society or affiliated academy of science is a part of the association, partaking in its control through elected representation in the association Council but without any loss of its own independence. That arrangement has proved highly satisfactory; it surely tended to stem any threat of disintegration that may have existed.

Cattell's activities in editing and publishing the weekly journal SCIENCE, *The Scientific Monthly*, "American Men of Science" and his other publications, constituted a very great and lasting general contribution toward the advancement of science in this country and toward the spread of scientific knowledge among the people. Those very successful private business enterprises have long been closely related to the American Association, since the Council made SCIENCE the association's official journal in 1900 and gave similar status to the *Monthly* in 1909. The growing lists of "American Men of Science," so laboriously compiled and so finely edited under Cattell's direction, have been most valuable to our organization in the selection of names for nomination to association fellowship, and in the naming of association committees.

Business relations between the association and Cattell concerning the editing and publishing of the two journals just mentioned were not wholly free from discordant notes, for the association had agreed to his retention of ownership and managing editorship without any arrangements for effective association control or any formal democratic influence in the conduct of the journals. The association could purchase subscriptions for its members at a wholesale rate, but it was constrained to accept whatever editorial and management policies seemed best to the owner. It was fortunate that Cattell's policies were generally so nearly in line with the aims of the association, and the arrangement resulted in obviously very great benefit to science workers and the association as well as to the publisher. They constituted an excellent bargain for both sides; for at that time the association found itself in no position to undertake the complex responsibilities of publishing a journal of its own, the journals offered were already successfully going concerns of the sort needed, and, in turn, they were greatly benefited by this form of association support.

Those were friendly agreements, adhered to for many years; but some difficulties arose, especially in connection with the official journal, which could of course be truly official only in a limited and special sense under the conditions agreed upon. For example, when the Washington office submitted notes and reports for publication in SCIENCE, final decisions as to their acceptance were in the hands of a single person, in whom were vested all the prerogatives of editor, publisher and owner. There was no possible recourse to any democratically constituted editorial board or other authoritative publication committee of the association. Other difficulties arose, but compromises were usually reached.

It is not hard to appreciate Cattell's dilemma, which was natural enough, with regard to the future of SCIENCE and the *Monthly*. He wished devotedly to aid science and the association, but at the same time he was driven to seek protection for his successful

publication business and his personal financial estate. When he offered to sell the journals to the association on his retirement, he hoped to accomplish both desires at once. His proposals seemed fair to the Executive Committee and the association Council, which accepted them with expressions of appreciation and ordered them signed and duly sealed. Further study and clarification of those proposals led to a revised and more detailed agreement, which was also accepted and duly signed by both parties. Questions persisted, however, not only in the minds of many association members but also in Cattell's mind, as to whether the final signed agreement really embodied all that was desirable on both sides. In conversation he once said to me that he would be willing to consider cancelling the agreement if the association should propose that solution. But no action was taken. The second agreement was in part fulfilled when *The Scientific Monthly* was purchased by the association, and the remaining part still stands, providing for the ultimate purchase of SCIENCE.

I am convinced that Cattell's original intention, in proposing that these journals should ultimately become solely the responsibility of the association, was to make a very fine gift to the organization and to American science workers. He regarded the specified terms of sale as a not too burdensome condition for such a gift. However that may be, those terms were definitely accepted by the association and they were adhered to in the recent purchase of *The Scientific Monthly,* which is now edited, published and managed, with evident success and great promise, by the staff of the association's Washington office. There can be no doubt that both association journals will be carried forward into the approaching new era of science advancement and that they will forever constitute a remarkable monument to one far-reaching aspect of Cattell's many achievements.

HIS SERVICE TO SCIENCE

By Dr. ANTON J. CARLSON
UNIVERSITY OF CHICAGO

BY the *diversity, duration* and *character* of Dr. Cattell's services to science our departed colleague has earned an enduring place in our hearts and in the history of American science. His services as president of our association are the least significant. Others more competent will speak of his many years and his great influence in the council and in the executive committee of the association. Dr. Cattell became the editor and publisher of SCIENCE fifty years ago. The character of that journal and its service to research and to education in science, we owe largely to that one man. That he had sufficient business acumen, foresight and energy to make SCIENCE, *The Scientific Monthly, School and Society* and his other publication projects carry on without subsidies, and succeed financially through their own merit, is additional evidence of Dr. Cattell's capacity and his faith in his fellow men. In these days of increasing specialization, our weekly journal, SCIENCE, has served and should increasingly serve to keep all of us somewhat in touch with progress and failure in all fields, and thus, discourage the development of the delusion that "what I am doing is the only work worth while."

The Scientific Monthly endeavors to present, in lay language, the significant problems and findings in special fields of science. Perhaps we should now take stock and inquire whether to-morrow we should, both in SCIENCE and *The Scientific Monthly,* present more regularly and clearly the method or methods yielding our new facts and our larger generalizations. In "American Men of Science," Dr. Cattell initiated an inquiring look at the human variant called the scientist.

The passing of a colleague who rendered conspicuous service to science and society for sixty years compels those still in harness to pause and ponder. From the point of view of physics and chemistry the individual man is an insignificant clod in the common world-stuff. We in biology find this clod a challenging problem. What makes this clod click? What makes one man perform better than some of his fellows? The answer is still largely out yonder, in the unknown processes of living matter. We salute heredity and scan the environment, and yet we do not know. In his maturing youth our departed colleague was a student at the Johns Hopkins University, at Leipzig, at Göttingen, at Paris and at Geneva. In those days the Johns Hopkins University was up and coming, science in Germany lighted the entire civilized world, and the German university was the mecca for the budding American scholar. Cattell's brief sojourn at Bryn Mawr College and at the University of Pennsylvania should probably also be counted in as part of his Wanderjahre and of some significance in the making of the man—James McKeen Cattell.

I knew, though not intimately, our departed colleague for some forty years. Three elements in his character stood out, according to my observation: First, his broad interest, sound judgment, and wisdom; second, his extraordinary energy and capacity to

work; third, his conspicuous courage. All three were undoubtedly significant in his outstanding service to science during the last fifty years and his attempt to make science understood and therefore effective in the ways of life of our non-scientific fellow citizens.

A word about the Cattell courage. Some colleagues probably would term it stubbornness. Yes, Dr. Cattell was at times stubborn. He might have been less insistent had all the facts in the issue been clearly known. But, in my experience, dogmatism did not obscure Dr. Cattell's vision for long, not for days or years. His was a mind unusually open and inquiring. But he never compromised on what he considered established facts, probable reason based on facts and on fundamental justice and fair play. When Columbia University dismissed Dr. Cattell from his professorship in 1917, during the mass hysteria of World War I, dismissed him on the charge of treason, because he as a plain citizen had signed a petition urging Congress not to declare war, Dr. Cattell did not take that lying down. A man or woman really loyal to science can not be false to any man or any country governed by the principles prevailing in our own beloved land. At this juncture, Dr. Cattell displayed some of the courage of Galileo, who, when condemned on his facts by the prophets of superstition, still insisted that "the earth does move."

Dr. Cattell's worthwhile labors will endure only if we, on taking stock, discover the wisdom, the vision and the courage to carry on. What are these unfinished tasks, these seemingly endless labors of Hercules? (1) The light of scientific understanding, despite our boasting, has not yet penetrated very far into the unknown night. The scientific conquest of the yet unknown in every field appears to me a more stupendous task and a more worthwhile challenge than the subduing of the other fellow with bayonets and bombs. Assuming we have or can find the brains, we could travel faster on the road towards new discoveries, did we have more intellectual, moral and financial support from society. (2) If there be a better way of securing understanding than by the method of science, human history and human experience have not yet revealed it. If this is a fact, it follows that the scientific method should be applied to all fields of human endeavor. This means that all men should have a workable understanding of it. Is that feasible? We will not know until we try, and so far we have not tried either very hard or with much persistence. Dr. Cattell made a start. We hear many words about the confusion in to-day's education. I think superficiality and triviality, rather than confusion, are our besetting sins in education. It is play in place of mastery, the "Quiz Kid" ideal of *what,* rarely proceeding to the *evidence* and the factual *why.* This is not an accusation against the other fellow. For when we examine the record, our own performance (in science education) is as yet below par. If our answer is: We can do no better with the human cerebrum against the primitive hypothalamus of man, we surrender our creed. We *can* try new devices with more persistence, if the *goal is clearly worth while.* Fortunately, we can not quit even if we want to, for human curiosity, human want and human pain are potent spurs. At present, education (even in the sciences) is largely memory conditioned by traditions and faith rather than by the exercise of reason based on understanding. But lest in these few lines about a great citizen and a great servant of science I (by partiality or exaggeration) sin against science itself, I must conclude by saying that the servants of science are not supermen. They are made out of the common human clay. And even they may at times falter in the application of their creed, which in terms of action reads: Keep your mouth shut and your pen dry till you know the facts. Use your intelligence and integrity with all diligence to get the facts. Then, and only then, can we speak with some measure of enduring wisdom as we walk humbly among our fellow men. Dr. James McKeen Cattell did not stray very often or very far from this difficult path during his sixty years of superb service to science.

RESOLUTION OF THE EXECUTIVE COMMITTEE

WHEREAS, The death on January 20, 1944, of J. McKeen Cattell has deprived this Executive Committee of this distinguished member:

Whose years of membership in the Committee have been continuous since its organization in 1920, and whose services to the Association began many years earlier;

Whose knowledge, comprehensive and incisive mind for so long have stimulated and guided the considerations of the Executive Committee;

Whose intelligent and constant concern about science and its services in America and throughout the world constantly expressed itself in important and far-reaching ways;

Whose exceptional organizing, business, and editorial abilities initiated and developed scientific publications and scientific organizations of surpassing scope and usefulness;

Whose personal researches and teaching produced novel and major contributions to psychological science, and trained many superior students whose contributions to science are widely known;

Whose ever-alert mind, keen judgment and frank com-

ment, when applied to the perplexities of his associates, helped many scientists to find their way more clearly through scientific and personal problems;

Whose friends, holding him in high professional respect and personal esteem, include almost all those who knew him.

Therefore, *be it resolved,*

That on this sixth day of February, 1944, we, the members of the Executive Committee of the Council of the American Association for the Advancement of Science, as the elected representatives of the Association, express to Mrs. J. McKeen Cattell and all other members of the family of Doctor J. McKeen Cattell, our appreciation of:

Doctor Cattell's unmatched services to American and International science and to scientific publications;

The privilege and good fortune in our long association with Doctor Cattell, and our sense of irreparable loss through his death.

The Executive Committee expresses its sympathy with Doctor Cattell's family and with the host of other friends of this truly great American citizen, and acknowledges the obligation of this Committee and the Council of the American Association for the Advancement of Science to go forward with the great work to which Doctor Cattell devoted so much of his thought and energy throughout his long and effective life.

J. W. BARKER
OTIS W. CALDWELL
W. B. CANNON
A. J. CARLSON
ARTHUR H. COMPTON
BURTON E. LIVINGSTON
KIRTLEY F. MATHER
F. R. MOULTON
E. C. STAKMAN
W. E. WRATHER

SOME PERSONAL CHARACTERISTICS

By Dr. R. S. WOODWORTH

PROFESSOR EMERITUS OF PSYCHOLOGY, COLUMBIA UNIVERSITY

DR. CATTELL was a man of strong character and disinctive personality. He was indeed, as has been said, a "dominant figure" in many scientific circles. It would be a mistake, however, to describe him as dominant in the sense of domineering or to imply that he was eager to dominate the groups in which he played so important a part. Characteristically outspoken and free-thinking, he was nevertheless not at all inclined to jump to a hasty conclusion or to express more than a tentative opinion on doubtful questions. He was an excellent committee man and council member, as amply proved by his fifty years of constructive service in such capacities.

In the old days it was true that many of his graduate students were afraid of him, as they had need to be if their experimental work was sloppy, if they neglected the literature of their problems, or claimed far-reaching conclusions from limited data, or failed to consider the "probable error" of their results. But the sincere research student had nothing to fear from Cattell, who was all interest and helpfulness. Instead of handing out prescribed dissertation subjects he gave each student the first say in the choice of a problem and followed the student's lead if it gave any promise of accurate scientific work. In consequence a great variety of experiments went on in his laboratory, though some of the best were following up his own leads. To his advanced students and junior colleagues he was a loyal personal friend as well as a keen scientific adviser.

In an after-dinner speech before a group of friends and associates, including many of his old students, Cattell told a story of his boyhood. His mother took him for examination to a phrenologist who gave the boy a fine rating in almost every respect but added one less favorable note: "You are deficient in will power!" The spontaneous outburst of laughter from his friendly audience seemed to surprise Dr. Cattell, who probably did not regard himself as a notably strong-willed individual. He may even as a youth have accepted the phrenologist's dictum and have striven earnestly to develop his will power. As an adult he certainly showed abundant courage in undertaking large and difficult tasks, and notable energy and persistence in putting them through. But as regards this matter of dominance his attitude was not one of imposing his will on his juniors and subordinates, though it was one of resisting domination by those higher up—unless their authority was due to merit and ability rather than simply to position. The ruling classes and pillars of society, and especially university presidents and trustees were the target of pungent epigrams which he evidently took great pleasure in concocting and applying to his victims in conversation and in his speeches and writings. Addressing a Johns Hopkins group at the time of President Remsen's inauguration he said:

> As Mr. Remsen told us that the professor would be pleased, but not particularly improved, by an increase in salary, I may perhaps be permitted to suggest that a president might be pained, but would not be seriously injured, by a reduction of his salary to that of the professor.

And speaking to a Harvard group on the baffling problems of the college curriculum he said:

It is not desirable to support at public expense certain country clubs or detention hospitals in which rich boys may be segregated. . . . Thanks to heredity and opportunity combined, there are more dominant personalities, such as Mr. Theodore Roosevelt, Mr. Pierpont Morgan and Mr. Lawrence Lowell, from this small upper class than from the working millions. Whether or not we should be better off without such men is not the question. Until opportunity can be equalized we shall have them; the college must bear its share of responsibility for what they do in the world.

It irked Cattell that the support of scientific research should be dependent on the favor of administrators and politicians. Time and again he urged that it would be much more logical if a fraction of the economic gain from research should be turned back as a matter of right to the scientific fraternity for the support of further research. In founding the Psychological Corporation in 1921 his hope was—and it is being realized—that applied psychology might pay its own way and earn at least a part of the funds needed for its advancement.

Cattell's interest in children was obvious to the many friends who visited his home on the mountain in Garrison, New York, a home no more remarkable for its location and scenic outlook than for its friendly hospitality. If you took your own children with you, you soon discovered that his love for children extended beyond his own large and appealing group of youngsters. Since these children were not sent to school there were rumors afloat that they were being kept in isolation and subjected to some strange experimental sort of education. As a matter of fact, with the editorial staff working in the home, with the numerous distinguished visitors and with the superior young men brought in as tutors, these children were far from isolated; and it may be permitted to add, as against the rumors of harsh treatment and restricted educational opportunities, that these children have not done so badly and that the solidarity of the Cattell family has been remarkable through all these years.

Cattell's deep interest in child welfare and family welfare, and his skepticism regarding the value of schools as they are were clearly set forth in an article on "The School and the Family," which he published in the *Popular Science Monthly* for January, 1909. He wrote:

Mankind will last only so long as children are born and cared for; and no plausible substitute for the family has been proposed. . . . The school by its nature weakens the family, for it takes the children away from home and gives them interests not centered in the home. . . . We need most of all to make life in the country attractive and fine. . . . The country school is at present no such place. Its general tendency is not to prepare children for usefulness and happiness in country life, but rather to make them inefficient and uncomfortable there and to send those who are more clever and ambitious away to the city. And the school shares with the city the bad preeminence of being one of the principal causes now working to break up the family. . . . Can one not fancy a school in the country, the house a model of simple beauty . . . surrounded by gardens, orchards and barns? . . . In this house the children would gather . . . for some two hours a day. The master and mistress and their older children . . . would teach the tricks of reading, writing and reckoning to those who lacked them, and all would be encouraged to go as far as they cared along the paths of letters and science. Two further hours might be spent in working about the place, in the shop, in the garden or with the animals, sewing, cooking or cleaning, learning to do efficiently and economically the things that must be done. . . . Children would always be the chief concern in a home and in a school such as this. There would be no pathological, no economic, no psychological conditions at work for their extermination.

THE PSYCHOLOGICAL CORPORATION

By Dr. PAUL S. ACHILLES

ONE of Dr. Cattell's many notable achievements was the organization in 1921 of the Psychological Corporation. The launching of this unique business enterprise in the early days of applied psychology was typical of his exceptional foresight and courage. Although others realized that many of the practical applications of psychology would be of economic value, it was Cattell who took courageous and far-sighted action. He proposed that psychologists should *earn* funds for research and, accordingly, he established a business corporation, owned and operated by psychologists, not for private gain but, as stated in its charter, for "the advancement of psychology and the promotion of the useful applications of psychology." Thus he sought both to bridge the gap between psychological theory and practice and to provide that some share of the legitimate profits from practice be conserved for research and the further advancement of the science. His challenge to the few hundred recognized psychologists at the time was, "Let us mix our brains with our money," explaining that, under the aegis of a business corporation, psychologists could render many useful services to business organizations, to educational institutions and to individuals, and thereby earn funds for psychological research.

I played no part in the corporation's founding, but was fortunate in 1926 to be elected its secretary and treasurer, and have maintained my connection with

it ever since. Hence I am asked to write this note concerning the corporation, in tribute to Dr. Cattell. I do so with a special sense of affection and gratitude, for in the enterprise which he founded I found my own career, and I know that he considered one of the corporation's most valuable functions the opening of useful careers to many younger psychologists, both within its own employ and in new fields of endeavor where its pioneering work would help to develop opportunities.

From a financial standpoint, the progress of the Psychological Corporation was discouraging at the start. Its bank balance once dwindled to less than $400. I recall the days when I worked in a corner of Dr. Cattell's offices and was somewhat in awe of him, but I soon learned to appreciate the kindliness and wisdom back of his sharp, keen questioning. Between us we went into considerable debt on the corporation's behalf, but with the help of Dr. Henry C. Link and others who ventured to join the staff, or to work for the corporation with only the hope of future financial reward, sources of earned income, never subsidies, were gradually developed. By 1939, all the corporation's debts had been paid off. In 1943 its gross income was over $600,000, and its first dividend, in the amount of $2 per share, was declared by its board of directors. Of greater significance than these figures, however, has been the growth of the corporation's staff, the cooperation in its work of many psychologists and students throughout the country, and particularly the recognition it has gained for services of high standard and their practical usefulness to business organizations and to individuals.

In accordance with Dr. Cattell's aims in founding the corporation, namely, that its profits beyond limited dividends to its stockholders and reasonable compensation to those engaged in its work should be devoted to research, the corporation established in 1941 the James McKeen Cattell Grants-In-Aid of Research. Much of the corporation's work is, in itself, useful research in applied psychology done in cooperation with business organizations, but these grants-in-aid are made to graduate students and other psychologists whose independent studies seem likely to contribute valuable practical applications. Thus the corporation, both within its own sphere of work and through the investigations of psychologists elsewhere, continues to plow back an increasing share of its earnings into research.

With the same foresight and humanitarianism in later maturity that characterized his early life, Dr. Cattell established, in November, 1942, the James McKeen Cattell Fund by generous donation of his six hundred shares of the Psychological Corporation's stock. As stated in the Trust Agreement, the purposes of this Fund are to "enable the Trustees or their successors to administer such fund for scientific research and the dissemination of knowledge with the object of obtaining results beneficial to the development of the science of psychology and the advancement of the useful application of psychology." Thus, so long as the corporation is successful, its work and its dividends will contribute, as Dr. Cattell wished, to the advancement of psychology and serve to remind us of his faith both in psychology and in his fellow psychologists.

SCIENCE SERVICE

By WATSON DAVIS

IN a day when scientists were afraid and unconfident of what newspaper reporters might do to their researches through careless and inexpert exposure to the public, J. McKeen Cattell was one of the little band of American scientists who risked their reputations in an experiment that had as its purpose the popularization of science.

When the original board of trustees of Science Service was convoked in 1921, Dr. Cattell was one of the three members who represented the American Association for the Advancement of Science. He was continuously a trustee from that time until his death and his term of service is exceeded by that of only one other scientist.

For most of this time and until recent years, he was a member of the executive committee and he thus was called upon to give of his time and energy more frequently than most of the trustees. For almost half of this time he was honored with the presidency of the institution, serving from 1928 until 1937 in this office.

The public was thus taken into the broad sphere of Dr. Cattell's many interests by his participation in the upbuilding of Science Service. This constituted a fitting rounding-out of his founding of publications in various scientific fields, his periodic issuance of critical and informative biographical directories of professionals in science and education, his development of scientific organizations, his pioneering in scientific psychology and his contending for freedom of teaching.

There were few scientific committees or organizations in which Dr. Cattell participated which were not enlivened and illuminated by his comments and criticisms. When he was not with the majority, he was consistently the loyal opposition that kept the

administration self-critical and free of complacency. Science Service in its formative years benefited in this way.

Those who labored along with the staff, under the direction of Dr. Edwin E. Slosson, in those early days of science's infiltration into the daily press realized the fundamental change in attitude that came over the scientific world as the result of the operation of Science Service under the encouragement of the scientists and newspapermen on its board of trustees. Science reporting was at first merely tolerated as a necessary evil and it finally became a respectable means of informing the public and the scientific world.

Early in the operation of Science Service Dr. Cattell decided that a selection from its report to newspapers could, with benefit to the scientists who read it, be printed as a supplement to each issue of SCIENCE. One of Dr. Cattell's considerations in doing this was to call the attention of scientists to the work of Science Service. This was beneficial to Science Service, and also, presumably, to the journal.

As the example of science reporting as practiced by Science Service gave rise to the present corps of science writers on newspapers and press associations, Dr. Cattell gave his aid to the widest possible publicizing of the meetings of the American Association for the Advancement of Science in which he always played a dominant role. In a sense he was looked upon by the gallery of science writers as one of the craft.

In the foundation of Science Service, Dr. William E. Ritter worked with E. W. Scripps, the great newspaperman. Dr. Ritter was instrumental in formulating plans and winning organized scientific support for the then new venture. Dr. Ritter's death occurred on January 10, just ten days earlier than that of Dr. Cattell. Thus there were lost to science within a fortnight two of our great pioneers in taking science to the reading world.

Truly this is the end of an epoch, and the years to come will reflect their pioneering.

IN MEMORIAM

By Dr. L. O. HOWARD

I AM very glad to be asked to write for the special number of SCIENCE. I first met Cattell, I think, in 1899 at the Columbus meeting of the American Association, during my second year as permanent secretary, but I am 86 years old and I sometimes forget details. He introduced himself to me and told me he was just back from Europe, and I think that he had recently bought SCIENCE from Gardiner Hubbard and Alexander Graham Bell. He wanted me to consent to the taking over of the journal as the organ of the American Association for the Advancement of Science. I told him that it would cost too much and turned him down. But I was wrong, and he immediately talked things over with R. S. Woodward, who was then connected with the Columbia faculty and with Sedgwick Minot, then connected with the Harvard Medical College, and they formed with me the first Committee on Policy of the Association. This committee did splendid work for the Association, until it was succeeded by the Executive Committee in 1920.

Cattell was a warm friend of mine from that time on, and I owe him a very great deal. He stood by me well during the twenty-two years of my permanent secretaryship and he was largely responsible for every good thing which the association ever did. I think, all things considered, that he was the most useful member the association ever had, and when we think of the big names included among them, in saying this I have said a very great deal.

LEADER IN SCIENCE

By Dr. G. H. PARKER
HARVARD UNIVERSITY

To many of us who were a few years younger than Dr. Cattell he was a life-long example of what an unflinching, upright seeker after scientific truth should be. No toil was too great, no effort too exhausting to hold him from worthy ends. With honest simplicity and vigor of purpose he set about his many tasks of helping science to its present high position. His abilities in psychological research and his directorship of laboratories in which such research could be carried out are now matters of no small historical significance. As one who transformed the American Association for the Advancement of Science from a body of mild accomplishments to the most effective agent in the growth of the wide scientific interests in this country and abroad he will always be remembered. In this large undertaking he showed remarkable abilities as a business manager , as an editor and above all else as a protagonist for what was highest and best in a world growing rich in scientific attainments and traditions.

Always open to approach by those who needed counsel and advice he gave to them unsparingly of his time and strength. What he expressed to such as sought him out were his honest and inmost convictions spoken with unquestionable freedom and full sincerity. His views were his own. If this course sometimes made enemies for him, it made enemies who at least respected him. Personally unselfish yet tenacious of purpose, his accomplishments were always for the general good. Few recognized to the extent that he did the strong undercurrents of scientific endeavor that flow through this and all other rightly constituted nations. With unusual insight and unerring fidelity he urged forward those scientific movements that make for real human betterment and the ideals of true learning.

With a life based upon such principles no wonder that the door of opportunity was often open to him! He was early admitted to membership in the American Philosophical Society and the National Academy of Sciences. He served the American Psychological Association and the American Association for the Advancement of Science in many capacities including that of President in both organizations. His membership in other societies was wide and distinguished. Intimacy with him was a delightful experience because of his generous and kindly nature. Ready and brilliant in thought his words were a pleasure to those who gave ear to them. What he said and what he wrote had often a note of shrewdness, but it was shrewdness tempered with the best of wisdom. The achievements of his life are of lasting value. They are not the doings of an hour to pass off as quickly. They are vigorous, far-sighted movements that because of his clear intuitions and energy have gained such an impetus that they are bound to carry far into the future. Such an inheritance Cattell has left us. It is for us to see that it shall not perish.

HUMANITARIAN—A REMINISCENCE

By Dr. HENRY NORRIS RUSSELL
PRINCETON, N. J.

I HAD once an opportunity to see an aspect of Dr. Cattell's activity and character which is probably less widely known than his lifelong support of the causes in which he believed, but does him equal honor. It was on an Atlantic liner, bound for England. Two days from port, a woman in the third-class, seriously ill, who was returning with her two young children for a last visit to her parents, suffered a sudden attack and died. The stewards, doing their best to help, went about the ship with one of the weeping children, and "passed the hat," securing a few pounds for them. Dr. Cattell, hearing of this, realized that the situation demanded help—and action—on a larger scale. He drew up a statement telling how the children were left destitute and required substantial aid, and headed a subscription list with a liberal personal contribution. Next—as he told me—"I got the purser to give me a list of all the passengers who had rooms with bath, and interviewed them personally." This brought a number of contributions—some of a hundred dollars. Fortified with this he posted the subscription-list on the companion-way—amounts and all—realizing that this course would set a scale appropriate to the emergency.

His knowledge of human nature was justified. Subscriptions came in steadily; and before the ship reached Plymouth, a fund of more than a thousand dollars was ready to place in trust with the steamship company—to be applied to the children's education and welfare.

Had this been a matter of private generosity on the part of Dr. Cattell it would not be appropriate to recount it here. But the very fact that he made it a public, and thus a community matter, illustrates his sound knowledge of practical psychology, and his clear perception of the limits of the conventional rules of reticence in such matters.

He alone, of all the long passenger-list, realized the magnitude of the need. With no time for delay, he made sure of a promising start for his campaign before he launched it publicly, and he followed it to a completely successful conclusion. The little episode illustrates so well his knowledge of human nature, and his interest in human welfare, that it deserves to be recorded.

COURAGEOUS LEADER

By Dr. W. F. G. SWANN
BARTOL RESEARCH FOUNDATION, SWARTHMORE, PA.

IN the death of Professor J. McKeen Cattell, science has lost a colorful personality who, for a full lifetime, has exerted a profound influence upon American scholarship.

The man who held the world's first chair in psychology did not confine his influence to the field of his specialty, but, using his extraordinary talents and initiative for organization in the field of publication, has done a work which few could do, and this with a whole-hearted devotion to the cause which spared

neither his personal energy nor his personal fortune in its furtherance. On talking with him one could not help but be impressed by the almost reverent attitude which he adopted towards the matter of standards in connection with the publications with which he was concerned. He would not hesitate to go after the material he wanted, but when he got it, he insisted on the maintenance of standards which he had at heart.

A man of Professor Cattell's forcefulness, strong convictions, courage and personal drive might be expected to find frequent occasion for difference of opinion with others, and several such cases of public interest can be cited. Unswerving in his convictions and strong in courage, he did not weaken in the attack because the enemy might be strong. Gifted with a sense of humor, he could make his darts tell, when fired to spill the blood of what he deemed arrogance, unfairness, complacency or indifference to the good of his fellows. However, in all this, he was a man who merited and won the respect of all and the love of those who were fortunate enough to be his friends.

SCIENTIFIC EVENTS

THE GREENWICH ROYAL OBSERVATORY

THE Royal Observatory, Greenwich, which was established in 1675 on its present site for the advancement of the science of navigation and nautical astronomy, as already reported in SCIENCE, may have to be moved. The naval correspondent of *The Times*, London, writes:

For over two and a half centuries it has provided the standards of navigators; to-day it gives the time to the whole world and all longitudes are measured from the meridian that passes through its transit instrument.

When it was established, Greenwich was a country village well clear of London's smoke; even in the last century, when magnetic observations were added to its duties, it was sufficiently rural to be free from disturbance. But to-day London has spread round it. Even at the end of the last century its work was much hampered by the construction of a power station from which smoke from the chimneys, sited exactly on the meridian, interfered with astronomical observations. The vibration of its reciprocating engines was also felt at the top of the hill.

The great development of electrical machinery, even in the home, compelled some years ago the removal of the magnetic observatory to a country site in Surrey. To-day interference of various kinds has become so serious that the removal of all activities that can be separated from the site on the prime meridian is being considered.

Sir Harold Spencer Jones, Astronomer Royal, pointed out that the observatory is already dispersed, partly owing to bomb damage and partly for security reasons.

A great deal of work would have to be carried out before any move could be made, and all that had been done so far was to accept, in principle, the need for a move if the observatory was to continue the valuable astronomical work it had done in the past.

There are only two alternatives—either to put up with the conditions at Greenwich and deteriorate into a second-rate institution or move away into conditions where useful work can be done.

THE INSTITUTE OF TECHNOLOGY AND PLANT INDUSTRY AT THE SOUTHERN METHODIST UNIVERSITY

THE Southern Methodist University at Dallas plans to establish an Institute of Technology and Plant Industry. It will have the active participation of the National Cotton Council, which in the field of plant study and adaptation will merge its facilities with the new institute. Dr. C. L. Lundell, of the University of Michigan, has been appointed director.

The institute will include an agricultural research station, a research laboratory and a southwestern herbarium. For the agricultural research station a tract of 110 acres of land has been purchased near Renner, nine miles from the university. It will sponsor research which will bring agriculture and industry into closer relationship.

A laboratory with other necessary buildings will be erected on the farm at an early date. A chemical building is to be erected at the university. Other buildings will be added as required. An agronomist and a geneticist with several farmers and mechanics have been appointed to the staff.

Affiliation of the institute with the National Cotton Council of Memphis provides for the removal to Dallas and other strategic locations in the Southwest of its cotton production and breeding projects, in which the two research organizations will supplement each other's activities.

Under the auspices of the council and the university a plant introduction garden at Acapulco, Mexico, on the Pacific Ocean will be maintained. The council is transferring its production staff, of which Dr. Harold H. Webber, of the research division, is director, to the university. It will spend $62,000 this year for cotton research, jointly sponsored by it and by the War Production Board. Dr. Simon Williams, director of the cotton research division of the National Cotton Council, now has his headquarters at the University of Texas, where he formerly had charge of cotton research.

THE ARGENTINE CITIZENS DECLARATION

MEMBERS of the Council of the American Physiological Society have signed a statement in appreciation of the declaration recently made by one hundred and fifty distinguished citizens of Argentina. This action caused the dismissal of Bernard A. Houssay, professor of physiology at the University of Buenos Aires, and of other well-known teachers of Argentina. The letter follows:

> The undersigned, members of the Council of the American Physiological Society, deplore the action of the Argentine government in dismissing from public service those persons who signed the so-called Argentine Citizens Declaration (SCIENCE, 98: 467, 1943). The one hundred and fifty men who signed that manifesto were all men of distinction in many walks of life, and included in their number the professors of physiology in the three leading medical schools of the country. By their action, they have spoken valiantly and fearlessly for the cause of democracy and intellectual freedom. We admire their spirit and congratulate them for their self-sacrificing devotion to the cause of human liberty.
>
> As free citizens of a sister American state, we desire to express publicly our sympathy for them in their present dilemma and our concern over this implied threat to the freedom of speech in the Americas. We are confident that these views are freely shared, almost without exception, by other members of the American Physiological Society to say nothing of the one hundred and thirty million other citizens of this country.
>
> We hope that this letter may bring to our Argentine colleagues some well-deserved moral support and encouragement in their continuing championship of the cause of democracy and freedom for the sake of which, in this instance, they have been so cruelly victimized.
>
> PHILIP BARD
> C. H. BEST
> HALLOWELL DAVIS
> H. E. ESSEX
> WALLACE O. FENN
> W. F. HAMILTON
> MAURICE B. VISSCHER

AWARD OF THE WILLARD GIBBS MEDAL

DR. GEORGE O. CURME, JR., vice-president and director of research of the Carbide and Carbon Chemicals Corporation, New York, has been awarded the Willard Gibbs Medal for 1944 of the Chicago Section of the American Chemical Society. The award is bestowed annually "in recognition of eminent work in and original contributions to pure or applied chemistry."

The citation reads in part: "More than any other individual Dr. Curme is responsible for the development of the Carbide and Carbon Chemicals Corporation and for its outstanding advances in the field of aliphatic chemistry. He may well head the list of those who have brought leadership in organic chemistry from Germany to the United States, particularly in the field of aliphatic chemistry."

Dr. Curme was born in Mount Vernon, Iowa, on September 24, 1888. He received the B.S. degree from Northwestern University in 1909 and the Ph.D. from the University of Chicago in 1913. He continued his graduate studies in Berlin, and from 1914 to 1920 he was a fellow at the Mellon Institute for Industrial Research, Pittsburgh. He became chief chemist of the Carbide and Carbon Chemicals Corporation in 1920, and since 1927 has been vice-president and director of research. He received the Chandler Medal in 1933, the Perkin Medal in 1935 and the Elliott Cresson Medal in 1936. He holds the honorary degree of doctor of science from Northwestern University.

The Willard Gibbs Medal, of which Dr. Curme is the thirty-third recipient, was founded in 1911 by William A. Converse, secretary of the Chicago Section from 1901 to 1909. It was named for Josiah Willard Gibbs, from 1871 to 1903 professor of mathematical physics at Yale University. The presentation will be made at a meeting of the Chicago Section on May 24.

Previous recipients of the medal include Dr. Vladimir N. Ipatieff, Svante Arrhenius, Mme. Marie Curie, Sir James Irvine, Dr. Richard Willstätter, Theodore W. Richards, Leo H. Baekeland, Ira Remsen, Arthur A. Noyes, Willis R. Whitney, Edward W. Morley, William H. Burton, William A. Noyes, F. G. Cottrell, Julius Stieglitz, Gilbert N. Lewis, Moses Gomberg, John Jacob Abel, William D. Harkins, Claude S. Hudson, Irving Langmuir, Phoebus A. Levene, Edward C. Franklin, Harold C. Urey, Charles A. Kraus, Roger Adams, Herbert N. McCoy, Donald Dexter Van Slyke, Robert R. Williams, Edward A. Doisy, Thomas Midgley, Jr., and Conrad Arnold Elvehjem.

SCIENTIFIC NOTES AND NEWS

DR. YANDELL HENDERSON, professor emeritus of applied physiology at Yale University, died on February 18 in his seventy-first year.

DR. CHARLES B. DAVENPORT, until his retirement in 1934 for thirty years director of the Station for Experimental Evolution of the Carnegie Institution at Cold Spring Harbor, N. Y., died on February 18 in his seventy-eighth year.

THE William Freeman Snow Medal was presented at the annual dinner meeting of the American Social Hygiene Association to Dr. Hugh S. Cumming, director of the Pan American Sanitary Bureau, previously

surgeon general of the U. S. Public Health Service, in recognition of "outstanding service in the field of social hygiene."

SELWYN G. BLAYLOCK, president and managing director of the Consolidated Mining and Smelting Company of Canada, Ltd., received a certificate of honorary membership at the annual meeting of the American Institute of Mining and Metallurgical Engineers, which was held in New York City on February 23.

THE officers of the American Society of Zoologists elected for the year 1944 are: *President,* Dr. Sewall Wright, the University of Chicago; *Vice-president,* Dr. H. W. Stunkard, New York University; *Secretary,* Dr. L. V. Domm, the University of Chicago; *Treasurer,* Dr. H. W. Beams, the State University of Iowa; *Member of the Executive Committee,* Dr. T. S. Painter, University of Texas.

DR. GEORGE GREY TURNER, professor of surgery in the University of London, has been elected to deliver the Hunterian oration for 1945 of the Royal College of Surgeons of England.

DR. A. H. GALE delivered the Milroy lectures of the Royal College of Physicians of London on February 22 and February 24. His subject was "A Century of Changes in the Mortality and Incidence of the Principal Infections Which Cause Death or Disability in Childhood."

COLONEL BLAKE RAGSDALE VAN LEER, dean of the Consolidated Colleges of Engineering of the University of North Carolina and North Carolina State College, has been elected president of the Georgia Institute of Technology to succeed Dr. Marion L. Brittain.

DR. CARL C. LINDEGREN, research associate at Washington University, St. Louis, has been appointed research professor on the staff of the Henry Shaw School of Botany. He will be assisted by Mrs. Gertrude Lindegren, Mrs. W. E. Pabor and others in directing research on the genetics of certain fungi, which is supported by an annual grant from Anheuser-Busch, Inc. He will also conduct a research course at the university on the genetics of fungi.

DR. STUART A. WALLACE, chairman of the department of pathology of the School of Medicine of Baylor University, has been appointed to the newly endowed Fulbright professorship of pathology. The endowment is a memorial to the late R. C. Fulbright founded by his widow, Mrs. Irene Fulbright.

ASSOCIATE PROFESSOR CHESTER RUSSELL, JR., acting head of the electrical engineering department of the Michigan College of Mining and Technology, has resigned to accept an industrial position. Resolutions of regret were passed by the executive committee of the faculty and by the college branch of the Society for the Promotion of Engineering Education, whose secretary-treasurer he was. Professor George W. Swenson, head of the department, will return to the college after an eighteen-months leave of absence for service with the armed forces as special consultant.

APPOINTMENTS at the School of Medicine of Baylor University include Dr. Kenneth L. Burdon, of the School of Medicine of the Louisiana State University, professor of bacteriology; Dr. John H. Perry, of the Medical College of the State of South Carolina, assistant professor of anatomy; Dr. Paul A. Wheeler, assistant professor of pathology at Washington University, St. Louis, associate professor of pathology, and Dr. S. Earl Kerr, of the U. S. Army Medical Corps, instructor in pathology.

DR. W. H. NEWTON, since the outbreak of the war acting head of the department of physiology at University College, London, has been appointed George Holt professor of physiology in the University of Liverpool, in succession to Dr. Herbert Eldon Roaf, who is retiring at the end of March.

DR. MARTIN D. YOUNG, senior parasitologist of the National Institute of Health, has been commissioned as sanitarian (R) in the U. S. Public Health Service. Dr. Young is in charge of the Malaria Research Laboratory of the National Institute of Health at Columbia, S. C., and also of the newly organized "Imported Malaria Studies" program.

DR. WILTON L. HALVERSON, Los Angeles, director of the California State Department of Public Health, has been appointed a member of the board of scientific directors of the International Health Division of the Rockefeller Foundation.

DR. HAROLD E. JONES, professor of psychology and director of the Institute of Child Welfare of the University of California at Berkeley, has been elected a member of the board of directors of the National Social Science Research Council.

DR. WILLIS L. TRESSLER, of the department of zoology of the University of Maryland and the Chesapeake Biological Laboratory, has leave of absence for the duration of the war to assist in the specialized equipment research program of the Federal Government.

DR. HAROLD W. WERNER, pharmacologist of the National Institute of Health of the U. S. Public Health Service, has been appointed head of the department of pharmacology of the research laboratories of the Wm. S. Merrell Company in Cincinnati.

DR. ELMER WALKER BRANDES, pathologist-in-chief in charge of the divisions of sugar-plant and rubber-

plant investigations of the Department of Agriculture, returned to the United States on February 14 after a visit to Africa. It is reported in the daily press that he brought back with him seeds of a sugar-bearing plant which he believes could be grown in the Gulf states.

AFTER his return to England from the Middle East to present to the British War Office and the Medical Research Council a report on the use of penicillin for war wounds, Professor H. W. Florey, of the University of Oxford, visited Russia to acquaint physicians there with his work on its development.

DR. FRANK A. BEACH, chairman and curator of the department of animal behavior at the American Museum of Natural History, addressed members of the faculty and graduate students of the departments of zoology and psychology at Indiana University on February 7. His lecture was entitled "The Neural and Hormonal Factors Involved in Reproductive Behavior."

DR. A. D. MACDONALD, dean of the Medical School of the University of Manchester, England, discussed plans for medical education in Great Britain after the war at the final session of a six-weeks symposium at the College of Medicine of New York University on "Medical Education in Relation to the Practice of Medicine of the Future."

A TWO-DAY symposium, on the industrial application of x-ray diffraction, sponsored jointly by the New York Section of the American Physical Society and the department of chemistry of the Polytechnic Institute of Brooklyn, was held at the institute on February 25 and 26. Representatives of more than sixty industrial firms were in attendance.

THE second war conference of the American Ceramic Society, Inc., will be held from April 2 to 5 at the Hotel William Penn, Pittsburgh. On Sunday night, April 2, the Edward Orton, Jr., Memorial Lecture will be given by Professor Hoyt C. Hottel, of the Massachusetts Institute of Technology. He will speak on "Radiant Heating."

THE International Association for Dental Research will hold its general meeting at the Drake Hotel, Chicago, on March 18 and 19 and the American Association of Dental Schools meets there from March 20 to 23.

IT is stated in *Nature* that a lecture on a chemical engineering subject has been endowed by J. Arthur Reavell, and will be given under the auspices of the British Institution of Chemical Engineers. It will be known as "The J. Arthur Reavell Lecture" and will be delivered not less frequently than once in every four years.

THE British Colonial Office announces that plans have been made to spend another £500,000 this year on the health program of Trinidad, £100,000 more than in 1943. New specialists in the hospitals, higher salaries for nurses and the appointment of a new officer of health education to supervise the teaching of hygiene in schools are among the improvements planned.

IT is reported that a British Scientific Film Association was formally constituted at a meeting held on November 20. Its primary aim is to promote the national and international use of scientific films in order to achieve the widest possible understanding and appreciation of scientific method and outlook, especially in relation to social progress. It will also collect, collate and distribute information on the scientific film, and publish comprehensive lists of films graded according to scientific merit and suitability for audiences. The association hopes to establish relations with government departments, public bodies and other organizations.

ACCORDING to the *Journal* of the American Medical Association the development of a rickettsia and virus laboratory in China by the Chinese National Health Administration is going forward with the cooperation of the American Bureau for Medical Aid to China and United China Relief. Dr. Chen-Hsiang Huang, instructor in medicine and virus research at the College of Physicians and Surgeons of Columbia University, fellow of the Rockefeller Institute for Medical Research, is *en route* to China to direct the work as head of the department of experimental medicine in the National Institute of Health. According to a release from United China Relief, at the present time there is no medical school or institution in China equipped to carry on virus research, and the rickettsia and virus laboratory will be the first of its kind in that country.

BOOKS RECEIVED

BROUWER, DIRK, FREDERIC KEATOR and D. A. MCMILLEN. *Spherographical Navigation.* Illustrated. Pp. xxiii + 200. Macmillan Company. $5.00.

DAUS, PAUL H., JOHN GLEASON and WILLIAM M. WHYBURN. *Basic Mathematics for War and Industry.* Illustrated. Pp. xi + 277. Macmillan Company. $2.00.

FREY, AUSTIN R. *Fundamentals of Radio Communications.* Illustrated. Pp. xii + 393. Longmans, Green and Co. $4.00.

MACCAULEY, C. B. F. *The Helicopters Are Coming.* Illustrated. xi + 165. Whittlesey House—McGraw-Hill Book Co. $2.00.

Practical Radio and Electronics Course. Three Volumes. "Fundamentals of Radio and Electronics," "Receivers, Transmitters and Test Equipment" and "Applied Electronics and Radio Servicing." Pp. 267. Illustrated. Prepared under the direction of M. N. BERMAN. Supreme Publications. $3.95, set.